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## PHYSICAL REJECTION FOR MILITARY SERVICE; SOME PROBLEMS OF RECONSTRUCTION

By J. HOWARD BEARD, M.D.

UNIVERSITY OF ILLINOIS

**T**HE draft has been a great inventory of the resources of the nation—it has shown both our physical assets and our human liabilities. The material was found to be of good grade; but 29.11 per cent. of the registrants were rejected by the physicians of the local boards and 5.8 per cent. by the camp surgeons as physically unfit for general military service, a total of 34.19 per cent.

The first draft was necessarily a rather coarse, hurried sifting of the fit from the unfit, and usually did not go beyond the defect sufficient to warrant rejection. The large percentage of abnormalities discovered in men from twenty-one to thirty-one years of age is the rate of the determining cause of rejection and is inconclusive as to the coexistence of other surgical or pathological conditions. For example, for such causes as hernia, goiter or flat foot, quickly discovered defects, the statistics of the draft boards are convincing, but for tuberculosis in individuals with goiter or heart disease in men with hernia, they are incomplete.

The evidence available indicates fifty to sixty per cent. of the men between thirty-one and forty-six years of age could not have passed for general military service if the physical requirements had remained unchanged.

The physical findings of the first draft to the public has proved an unpleasant revelation; to the student of preventive medicine the fulfilment of a prophecy. An examination of the causes of rejection in reference to origin and manner of development shows that many could have been easily prevented, readily corrected, or promptly cured. In fact, we are so far

beneath our ability to increase the vigor, efficiency and happiness of the race as to appear to be still within the shadows of the dark ages.

#### CAUSES FOR PHYSICAL DISQUALIFICATION BY CAMP SURGEONS

It should be borne in mind that the statistics of the Report of the Provost Marshal General are based upon ten thousand two hundred fifty-eight records spread over eight camps. The percentage of disqualification at camp varied between seventy-two hundredths per cent. to eleven and eighty-seven hundredths per cent. (average five and eight tenths per cent.) under the first draft, which was smaller than the national average (seven and six tenths per cent.) for the period February 10 to September, 1918. The variation is due both to differences in standards observed by examining surgeons, and to the region of the country from which the recruits are drawn.

TABLE I

#### CAUSES FOR PHYSICAL REJECTION BY CAMP SURGEONS— NATIONAL ARMY EXPERIENCE UNDER FIRST DRAFT OF THE SELECTIVE SERVICE ACT OF 1917

Causes for Physical Rejection	Number	Per Cent.
Eye .....	2,224	21.68
Teeth .....	871	8.50
Hernia .....	766	7.47
Ear .....	609	5.94
Heart disease .....	602	5.87
Tuberculosis .....	551	5.37
Mentally deficient .....	465	4.53
Genito-urinary (venereal) .....	438	4.27
Physical undevelopment .....	416	4.06
Nervous disorders (general and local) .....	387	3.77
Flatfoot .....	375	3.65
Joints .....	346	3.37
Bones .....	304	2.96
Blood vessels .....	191	1.86
Underweight .....	163	1.59
Respiratory .....	161	1.56
Genito-urinary (non-venereal) .....	142	1.39
Skin .....	118	1.15
Ill-defined or not specified .....	93	.91
Digestive .....	82	.80
Alcoholism and drug habit .....	79	.77
Muscles .....	66	.64
Not stated .....	809	7.89
Total number of cases of physical rejections considered .....	10,258	100.00

Table I. shows that thirty-six and twelve hundredths per cent. of all rejections were due to defects of the eye, the ear and the teeth; eleven and twelve hundredths per cent. to hernia and flat foot; five and sixty-five hundredths per cent. to underdevelopment and underweight; five and thirty-seven hundredths per cent of the total to tuberculosis.

We need only to consider the causes of disqualification for military service in connection with the physical defects of school children to see the close relation of the one to the other.

#### DISEASES AND DEFECTS OF THE EYE

Over one fifth (twenty-one and sixty-eight hundredths per cent.) of the physical disqualifications for military service was due to disease of the eye. Gonorrhea, syphilis, trachoma and the accidents of carelessness and ignorance—preventable causes—are responsible for forty per cent. of all blindness. Eliminate these and we may close four of every ten of our institutions for the blind and use their maintenance funds for a necessary charity.

As causes of impaired vision, uncorrected astigmatism, short-sightedness and squint aggravated by close work are of the first importance. Dufour has shown that the number of pupils with myopia and the average degree of shortsightedness increase from class to class and with the addition in school demands. This form of myopia is usually primarily due to congenital astigmatism, a very common condition, and the consequent strain upon the accommodation of the eye in the effort to see. Risley has reported a series of cases in which astigmatic eyes had passed, while under his observation, from hypermetropic to myopic refraction.

Neglected squint is an important factor in the serious impairment and destruction of vision. The bad advice to parents that the child beginning to squint will grow out of it, frequently has led to delay until the eye was blind. If the serious consequences of procrastination were known, children would be no more neglected than if they had appendicitis or diphtheria.

Rigid enforcement of the law relative to safeguarding the eyes at birth and to the control of venereal diseases and trachoma will save many eyes. Workers in occupations where eye injuries are common should be required to use proper methods of protection. No child should be permitted to begin school until his eyes have been examined by a competent oculist. When, for economic reasons, parents are unable to have him consult an ophthalmologist, the school board should make pro-

visions for his eye examinations. It will be better for society and cheaper for the state to provide glasses to correct errors of refraction than to bear the expense of class repetition, retardation or the result of delinquency, to which the eye defect may be a secondary but determining factor.

#### DISEASES OF THE EAR

Diseases of the ear were responsible for five and ninety-four hundredths per cent. of the rejections. With few exceptions, auditory defects were the reason for disqualification. Middle-ear disease, which causes eighty-five to ninety per cent. of all deafness, usually has its origin in the nasopharynx and the Eustachian tube. Approximately thirty per cent. of the deafness in the United States is due to the suppuration of the middle ear during childhood. Ten per cent. of the discharging ears of children are complications of scarlet fever, measles, or other communicable diseases; in ninety per cent. diseased tonsils and adenoids are predisposing causes. In a systematic oral examination of patients with adenoids, Tomlinson found some grade of ear involvement in seventy-five per cent.

Where the function of hearing is impaired, the mentality of the child suffers. He becomes inattentive, in many instances diffident, and frequently a class repeater. Partial deafness, especially when it dates from childhood, is a disadvantage that seldom permits the individual to attain the efficiency of which he would be otherwise capable.

Much deafness would be avoided if diseases of the ear were promptly treated by specialists and if parents would see that the adenoids and enlarged tonsils of their children received proper attention. Medical inspection of schools and free treatment for children with disease of the nose, throat and ear whose parents are unable to provide medical care for them should be an important part of any program for the prevention of deafness.

#### DEFECTIVE AND CARIOUS TEETH

Rejection of eight and five tenths per cent. of the registrants on account of their teeth occasions no surprise in a nation where decayed teeth is a disease of the masses and where seventy to ninety per cent. of school children have defective teeth. Had military requirements of previous wars been observed, a much larger per cent. would have been disqualified. The loss of a number of teeth both causes deformity of the face and impairs digestion by decreasing the ability of the individual to

masticate his food. The pus pockets and root abscesses are a serious menace to general health.

Instruction in oral hygiene, the examination of teeth of school children at least twice a year and a public clinic for the benefit of those unable to consult a private dentist would give the coming generation a digestion, a set of teeth, and a beauty of countenance unequaled by any of its predecessors.

### HERNIA

Hernia was the cause of seven and forty-seven hundredths per cent. of all rejections. A number of the ruptures encountered are congenital or are superinduced by anatomical abnormalities. Chronic constipation, faulty posture, lack of exercise and improper clothing, with resulting flabby abdominal muscles, and sudden strain are important factors in its production. Hernia to a considerable degree is preventable. Its presence is proof of neglected surgery.

### FLAT FEET

If flat feet were considered and treated with reference to their predisposing causes, physical rejection on their account would be much less than three and sixty-five hundredths per cent. Flat feet should be recognized as weak feet before flattening of the long arch has developed and the usual train of symptoms are present. The body weight normally passes slightly to the inner side of the center of the knee, through a line prolonged from the crest of the tibia, through the ankle, over the dorsum of the foot to the second toe. With the beginning of eversion of the foot and the change of direction of the body weight, it is only a question of time before the symptoms and signs of flat foot become evident.

The importance of muscle insufficiency, improper nutrition and communicable disease in the production of flat foot are shown in the following table, taken from the statistics of Ehrenfried:

Children under twelve years of age examined.....	1,000
Children with debility of the feet.....	440
Congenital—club-foot .....	18
Idiopathic—physical debility .....	95
Secondary, due to some other condition .....	327
A. Rickets .....	200
B. Cases of unsuspected infantile paralysis.....	107

## UNDEVELOPMENT AND UNDERWEIGHT

It creates no surprise that poor general physical condition accounted for five and thirty-seven hundredths per cent. of the rejections, when it is known that from fifteen to twenty-five per cent. of the school children suffer from malnutrition. Defective sight, deafness, difficult breathing caused by adenoids and nasal obstructions, enlarged tonsils, contagious diseases, and insanitary home surroundings are preventives and deterrents of normal growth.

Regardless of whether physical subnormality is an expression of one or a combination of these causes, it is preventable and correctable. Its presence in a large per cent. of the population is a reflection on our civilization and a menace to the future welfare of the nation. An efficient system of child welfare, medical inspection of schools, school lunches and physical education throughout school attendance would insure the proper development of children to adults. An attempt to teach an undernourished child is an attempt to decorate before laying the foundation. The small cost of the school lunch, in most instances, should be borne by the child; if necessary, it should be paid for by the school. The better work of the child and the instructional value of the lunch would well repay the trouble of preparation and the expense.

The same undevelopment, bad home conditions and physical handicaps which contribute so largely to the production of sub-standard individuals create pressing problems for the teacher, the physician, the sociologist and the penologist. The physically defective individual, denied his inalienable rights of adequate food, healthful environment and proper medical care falls an easy prey to disease, may develop anti-social tendencies, or, as industrial flotsam, often settles along the shores of endeavor, a hindrance to the launching of enterprise.

## PHYSICAL DEFECTS AND DELINQUENCY

The loss or impairment of an organ destroys or decreases the efficiency of the harmonious interaction of the other organs of the body, and continued existence is the result of readjustment. The resulting reaccommodation not only affects the physical personality, but it may also give rise to deviation from normal mental reaction. We are unable to estimate the exact part played by defects of the ears and eyes, diseased tonsils and adenoids, in the production of truancy and delinquency. Neither are we able to determine the relation of undernutrition and anemia to incorrigibility. We do know, however, that physical

defects and undernourishment may be the precipitating cause, when associated with such contributing factors as defective ancestral germ-plasm and oppressive environment. One individual in good surroundings and well nourished, with a stable nervous system, may survive the misfortune of his physical handicap; while a physical defect in another with an already overtaxed brain may produce such nervous irritation as to give rise to mental abnormality or antisocial tendencies.

### PHYSICAL FITNESS OF WOMEN

While we have available no such extensive statistics for women as for men, fragmentary evidence and comparison of the findings of the medical inspectors of schools in the case of boys and girls do not indicate that women are of better general physique than men. All the major causes for physical disqualification under the draft are by no means peculiar to the male and may occur in the female. The first draft, therefore, may also be considered a more or less accurate index of the physical development and defects of the women of the nation between the ages of twenty-one and thirty-one. From the view-point of racial vitality and progress the physical development of women is as essential as that of men—the prevention of disease and physical handicaps perhaps of greater importance.

### LEST WE REPEAT

A survey of the causes of physical disqualification in men twenty-one to thirty-one years of age does not warrant extreme pessimism in regard to the physical deterioration of the manhood of the nation, as a number of the defects are anatomical, largely preventable, and do not indicate substandard general physical condition. They are, however, an overwhelming, unanswerable argument for the immediate adoption of a comprehensive system for the promotion of child welfare, for the medical supervision of schools, for instruction in hygiene, and for thorough physical training.

In this country 230,000 infants die annually. Before the war an infant had six or seventeen chances in a hundred of dying in the first year, depending on whether its father earned over twelve hundred fifty dollars or under four hundred fifty. One baby in twenty-five dies from diseases directly due the care and condition of its mother during pregnancy and confinement. The death rate among infants whose mothers go out to work is twice that of those whose mothers are able to remain at home



and care for them. Thousands of infants weather the first years of life battered and weakened, forever handicapped in becoming effective members of society. Poverty and ignorance underfeed from fifteen to twenty-five per cent. of the children of the nation. Tens of thousands of human beings are being reared in insanitary surroundings in which it is impossible for them to attain normal growth and health.

In spite of its importance, required systematic learning of hygiene, sanitation and physiology is an exception, even in our institutions of higher learning. The present legal requirements for these subjects in the elementary and secondary schools are inadequate and are in great need of immediate revision. Mind embellishment takes precedence over that knowledge which would safeguard health and prevent the loss of life. A system of education that does not prevent its finished product from blistering his arm with a pepper plaster or from pouring sulphur in his shoes to avoid influenza is no more successful than one that permits a student to graduate without a knowledge of mathematics or of language. The draft has taught that in developing a child the gymnasium and library, the classroom and the playground, the laboratory and the great outdoors are co-ordinate. It has shown that in moulding efficient citizens to support the nation in its hour of need the lowly sandwich, served in a school lunch room, and fresh air may be as valuable as the "rule of three." In other words, social effectiveness is equally dependent upon adequate mental and physical development. The most valuable individual to the state is he in whom the moral, physical and mental qualities are most highly developed, absolutely correlated and in perfect harmony. The need of the hour is that physiology, sanitation, hygiene and physical training should have place in our educational system, commensurate with their importance to the individual and to society.

#### MEDICAL INSPECTION OF SCHOOLS

Medical supervision of schools should include a school nurse service. It should apply to buildings and equipment, as well as to the mind and body of the children. About twenty million children, nearly one third of the population of the country, are compelled to spend, on an average, five hours a day in school one hundred sixty-five days in the year. Under such circumstances, as effective precautions should be taken to insure proper ventilation, lighting, heating, furniture and general sanitary conditions in the school as to provide for the child's physical welfare as to enforce its attendance. It is obviously unfair to re-

quire a child to occupy a seat likely to produce body deformity or to study in a light that may impair its vision, yet this is done throughout the nation. It is equally unjust to bring together a number of young persons at an age when most susceptible to communicable diseases without medical supervision, unless the school is to provide a great disease exchange for the community. In this connection it must be remembered that the twenty million children of elementary-school age come in contact, more or less intimately, with approximately twelve million others of pre-school age. These younger children are very susceptible to infectious diseases and are in the age group in which eighty-five per cent. of the mortality occurs.

When medical inspection is carried out, a disease history of the child will be obtained on entry, and an enormous number of defects and functional diseases will be discovered that may be corrected. It will provide a careful medical record preliminary to physical training, will determine in what individual corrective gymnastics are needed, and, by its periodical examination, will ascertain the physical progress of the child. The community should realize, however, that it is of little value to spend money to discover defects unless provision is made to remedy them when they are found. Each school district should provide a dispensary service for school children and parents must be educated to save themselves expense by paying the family doctor a small sum to prevent, rather than a large sum to cure, illness in their children.

#### PHYSICAL EDUCATION

Physical education should have as its purpose the development of the functional power of the child to the highest level consistent with the most successful training of its intellect; it should meet the needs of the weak, who require it most, as well as of the strong; it should be graded for various ages; its progress should be determined by tests and measures of development, strength, agility, endurance and ability to do. Its proficiency should be based upon well-defined accomplishments and not upon one or two periods of exercise for a given time.

In general, provision must be made for the physical education of three classes of individuals: (1) the physically normal, (2) the subnormal, (3) the abnormal and physically defective.

The physically normal should not only be required to take general exercise, but should be encouraged to select some form of sport and to acquire a fondness for it. In the primary school it may mean games and outdoor exercise; in the high school or

college the development of an "athletic hobby" to keep him in "fighting trim" when required to lead a sedentary life.

The subnormal individual, underweight and understrength for his age, undeveloped but organically sound, will require special and general exercise to meet the tests of normal. Having shown his ability by passing the required efficiency tests of normal, he may be further educated as in the first class.

In the abnormal group we find individuals distorted as to posture or carriage, but who may become greatly improved or who may overcome their deformity by corrective gymnastics. In this class we also have the cripples and those with heart lesions, hernia, diseases of the joints, etc. A number of these individuals could be cured by proper surgery, and would be, if their parents were so advised by a medical inspector in whom they had confidence. All would be greatly benefited by special calisthenics and other light forms of exercise under medical supervision. In many instances members of this group have been led to attach too much importance to their condition. Nothing will do more than safe, beneficial exercise to lift them from the despair of chronic invalidism to the enthusiasm of physical well-being.

Physical education is a great antidote for antisocial tendencies. It teaches temperance, self-control, courage and endurance. It produces the ability to play the game to the end and to lose with a smile or to take victory with modesty and magnanimity. It Americanizes and de-hyphenizes by the democracy of the playground and by the catholicity of its games. It places the nation on the solid foundation of physical soundness, morality and vitality.

Reconstruction must mean a new day, a new courage—a new justice. Education must be revised to cultivate properly the body as well as the mind. The slaughter and crippling of infants by atrocious social conditions must cease. The underfed must be adequately nourished; children physically handicapped must receive medical care when the greatest number of cures are possible. The treatment of mental defectives must be inspired by scientific common sense rather than by ignorant and foolish sentiment. Living conditions must be those in which a human being can best live, grow and work.